Key for Spring 2013: Problem 1 from Final B for 2:30 Class

Assume capital markets are perfect and that Gnusmas and Elppa have identical assets. Gnusmas' outstanding equity has a market value of $150 million and has debt that matures for $250 million eight years from today. These bonds earn an interest rate of 7% per year. Eppla has no debt and its equity has a market value of $300 million. What set of transactions will generate an arbitrage profit today? Show that the conditions of arbitrage are met if the firm's value ends up at $200 or $350 million eight years from today. Note: calculations required.

$$V_L^G = 150 + \frac{250}{(1.07)^8} = 150 + 145.502 = 295.50 < 300$$

buy   sell/short

⇒ buy Gnusmas' debt + equity and shortsell Elppa's equity

Trans	$0	200	350
+5 Buy Gnusmas' debt	−145.50	+200	+250
+5 Buy Gnusmas' equity	−150	0	+100
+5 Short Elppa's equity	+300	−200	−350
Total	+4.50	0	0